

Section 2.5 Soil Resources

Data Adequacy Deficiency – Please provide information on proposed monitoring efforts during project construction to ensure success of mitigation measures.

Data Adequacy Response – Periodic monitoring of drainage water and nearby streams or other surface water will be necessary to ensure that any soil lost due to erosion has not reached surface waters. Monitoring activity may include both regular visual inspections of irrigation or drainage ditches, streams, ponds, or other surface water. These inspections may also include sampling surface water for turbidity (an indicator of sediment load), oil and grease (an indicator of leaks from construction equipment), and other constituents. Details of any monitoring, including possible sampling, will be more comprehensively covered in the construction NPDES permit application.

For stream channel re-engineering, the same types of monitoring (e.g., surface water turbidity, oil and grease) will be required to ensure that temporary and final stream routes are not affected by soil loss or leaks from equipment. Stormwater monitoring will be particularly important, as larger scale earth moving will be necessary for rerouting streambeds at the project site.

Data Adequacy Deficiency – Please discuss any direct, indirect or cumulative impacts to soil quality associated with trenching and backfilling of the natural gas pipeline and rerouting of the streambeds located on the project site.

Data Adequacy Response – Overall construction effects on soils may include increased erosion from wind or water, compaction loss of soil productivity, and disturbance of saturated soils. Soil erosion results in the loss of topsoil and can contribute to the sediment load of surface waters. Disturbed agricultural soils, including those affected by compaction or loss of topsoil, may be returned to a condition as close to their initial physical state as possible, using replacement topsoil, grading, tillage, and revegetation.

Re-engineering of the stream channel may also require establishment of suitable soil conditions for riparian habitat. This may include the sequential removal and replacement of soils to re-establish proper riparian habitat, use of appropriate streambed soils to facilitate retention of surface water (e.g., ensure that it is not a losing stream), and ensure that adequate erosion protection, such as streambank stabilization, is achieved to prevent loss of soils in the new channel to the surface water. Without these design precautions, sediments may be lost to the streamwater and the stream channel may not be sufficient to retain water and establish a viable riparian habitat suitable for aquatic wildlife and plant species.

Data Adequacy Deficiency – Please provide agricultural maps along the proposed gas pipeline route with a legend containing farmland mapping classifications.

Data Adequacy Response – The attached Figures 8.9-3a through 3e are agricultural maps of the soils along the proposed gas line route.

Data Adequacy Deficiency – Please provide an assessment of the effects of the proposed natural gas pipeline construction activities (trenching, installation, backfilling, etc.) on soil uses and agricultural lands.

**COSUMNES POWER PLANT
DATA ADEQUACY RESPONSES (01-AFC-19)**

Data Adequacy Response – Construction of the CPP and associated gas pipeline include building facilities, parking and road laydown areas, trenching and directional drilling, land grading, and other activities. For pipeline construction, excavation and storage of several feet of spoil adjacent to the trench, as well as laydown areas for pipe, excavating equipment and other vehicles, etc. may contribute to soil compaction or erosion. Overall construction effects on soils may include increased erosion from wind or water, compaction loss of soil productivity, and disturbance of saturated soils. Soil erosion results in the loss of topsoil and can contribute to the sediment load of surface waters. The degree to which soil erosion related to construction occurs depends on soil erodibility (see Table 8.9-2B) and AFC Section 8.9.3.1), proximity of construction to surface water, construction timing and method, and implementation of best management practices for erosion control.

Soil re-vegetation potential, defined in this analysis as the potential for establishment of wild herbaceous cover, is rated good for most soil mapping units at the Project Site and proposed pipeline route. Thus, there should not be limitations for re-establishment of vegetation following completion of construction. In areas where farmland has been disturbed or taken out of production, replacement of soils and reseeding to return the soil to productivity may be necessary following construction activities.

Farmland disturbed during construction may require replacement of temporarily stockpiled soils, physical modification (e.g., grading and tillage) to ensure its return to productivity, and revegetation with a cover crop to prevent erosion.

Data Adequacy Deficiency – Please provide an assessment of the accelerated soil loss to wind and water during site and linear construction.

Data Adequacy Response – Because most soils at the site and along the pipeline route are finer-textured loams, silt loams, or clay loams, the potential for soil erosion from water will likely be low. Several soils, including the Columbia sandy loam, the Hadselville-Pentz Complex, and the Corning Complex are sandy loams, and therefore, exhibit a greater risk for water erosion.

Because most soils are finer-textured, wind erosion may represent a greater concern than water erosion. Dry clays or other fines on the ground surface may be emissive, particularly if there is disturbance due to excavating or vehicle traffic.

Water erosion hazard ratings for soils at the Project Site and along the proposed gas pipeline route are provided in AFC Table 8.9-2B. Most soils are mapped as level or gently sloping (< 3.0%), suggesting that the project site slopes should not be a major erosion enhancement factor. For most soils, erosion hazards typically range from none to moderate.

Use of straw bales, mulch cover, curbs and gutters, temporary retention areas or drains will both minimize erosion losses due to water, and control sediment loss to the surrounding environment. To reduce wind erosion, addition of water or polyacrylamide sealants will minimize dust loss, thereby maintaining air quality, reducing the loss of topsoil, and minimizing non-point impacts of wind erosion on nearby surface water. Other practices, such as silt fences, temporary geotextile blankets, or straw cover will minimize soil loss from stockpiled soil.









